The Claims

What is claimed is:

1. A process for the oxidation of an unsaturated alcohol of formula

(I)

wherein:

R^1 represents a hydrogen atom, a C_1 to C_{20} linear, branched or cyclic saturated or unsaturated hydrocarbon group, said hydrocarbon group optionally being substituted and also optionally including one or two oxygen or nitrogen atoms;

R^2 represents a C_2 to C_{20} linear, branched or cyclic alkenyl, alkandienyl or alkantrienyl hydrocarbon group, said hydrocarbon group optionally being substituted and also optionally including one or two oxygen or nitrogen atoms; or said R^1 and R^2 optionally may be bonded together to form an unsaturated ring having 5 to 20 carbon atoms, said ring optionally being substituted and also optionally including one or two oxygen or nitrogen atoms;

wherein the optional substituents of R^1, R^2 and of the ring which said R^1 and R^2 together may optionally form, are C_1 to C_{15} linear, branched or cyclic alkyl, alkenyl or aromatic groups;

into a corresponding unsaturated aldehyde or ketone of formula

(II)

wherein R^1 and R^2 are as defined in formula (I);

wherein the oxidation is performed by a hypochlorite salt of formula

$$M(OCl)_n \qquad \text{(III)}$$

in which M represents an alkaline metal, in which case n is 1, or an alkaline-earth metal in which case n is 2;

and in the presence of a catalytic amount of a N-(2,2,6,6-tetraalkyl-4-piperidinyl-N-oxyl)-2-amino-1,3,5-triazine compound.

2. The process of claim 1, wherein the unsaturated alcohol is a compound of formula (I),

(I)

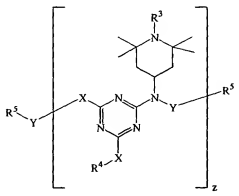
wherein:

R^1 represents a hydrogen atom;

R^2 represents a C_5 to C_{15} linear, branched or cyclic alkenyl or alkandienyl hydrocarbon group, that is optionally substituted; or R^2 represents a C_7 to C_{15} linear, branched or cyclic alkantrienyl hydrocarbon group that is optionally substituted; and

the optional substituents of R^2 are C_1 to C_8 linear, branched or cyclic alkyl, alkenyl or aromatic groups.

3. The process of claim 1, characterized in that the N-(2,2,6,6-tetraalkyl-4-piperidinyl-N-oxyl)-2-amino-1,3,5-triazine is of formula



(IV)

wherein z represents an integer from 1 to 20;

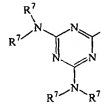
R^3 represents, simultaneously or independently, a hydrogen atom or an oxyl radical (O•), with the proviso that at least one R^3 group is an oxyl radical;

X represents an oxygen atom or a $-NR^4-$ group;

R^4 represents, simultaneously or independently, a hydrogen atom, a 2,2,6,6-tetramethyl-4-piperidinyl group, a 2,2,6,6-tetramethyl-4-piperidinyl-N-oxyl radical group or a C_1 to C_{15} linear, branched or cyclic saturated or unsaturated hydrocarbon group, said hydrocarbon group optionally including one or two oxygen or nitrogen atoms; or two R^4 groups, bonded to the same nitrogen atom, may be bonded together to form a heterocycle having 5 to 7 members and which may contain an oxygen atom;

R^5 represents, simultaneously or independently, a hydrogen atom or a NR^6_2 group;

R^6 represents, simultaneously or independently, a hydrogen atom, a C_1 to C_{20} linear, branched or cyclic saturated or unsaturated hydrocarbon group, a 2,2,6,6-tetramethyl-4-piperidinyl-N-oxyl radical group, a 2,2,6,6-tetramethyl-4-piperidinyl group or a group of formula

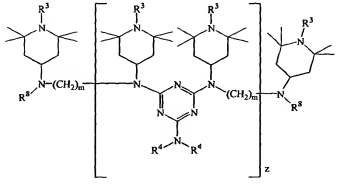


(V)

R^7 representing, simultaneously or independently, a hydrogen atom, a C_1 to C_{12} linear or branched alkyl group, a 2,2,6,6-tetramethyl-4-piperidinyl-N-oxyl radical group or a 2,2,6,6-tetramethyl-4-piperidinyl group; and

Y represents, simultaneously or independently, a C_2 to C_{20} linear, branched or cyclic alkylene group optionally including one or two oxygen or nitrogen atoms.

4. The process of claim 3, wherein the N-(2,2,6,6-tetraalkyl-4-piperidinyl-N-oxyl)-2-amino-1,3,5-triazine compound is a polymeric or oligomeric compound of formula



(IV')

wherein z represents an integer from 2 to 10;

m represents an integer from 2 to 12;

R^3 is as defined in claim 3;

R^4 represents, simultaneously or independently, a hydrogen atom, a 2,2,6,6-tetramethyl-4-piperidinyl-N-oxyl radical group, a 2,2,6,6-tetramethyl-4-piperidinyl group or a C_1 to C_{10} linear or branched alkyl or alkenyl group; or two R^4 groups, bonded to the same nitrogen atom, may be bonded together to form a heterocycle having 6 members and which may contain an oxygen atom; and

R^8 represents, simultaneously or independently, a hydrogen atom, a C_1 to C_{10} linear or branched alkyl or alkenyl group, a 2,2,6,6-tetramethyl-4-piperidinyl-N-oxyl radical group, a 2,2,6,6-tetramethyl-4-piperidinyl group or a group of formula (V).

5. The process of claim 4, wherein the N-(2,2,6,6-tetraalkyl-4-piperidinyl-N-oxyl)-2-amino-1,3,5-triazine derivative is a N-oxyl derivative of the polymers having the CAS Registry Numbers 71878-19-8 or 192268-64-7.

6. The process of claim 1, wherein the hypochlorite salt is selected from the group consisting of NaOCl, KOCl and $Ca(OCl)_2$.

7. The process of claim 1, wherein one of a bromide salt of formula M'Br or a bicarbonate of formula $M'HCO_3$ is added to the process, wherein M' is an alkaline metal.

8. The process of claim 1, wherein a bromide salt of KBr or NaBr is added to the process.

9. The process of claim 1, wherein a bicarbonate of $KHCO_3$ or $NaHCO_3$ is added to the process.

10. The process of claim 1, wherein the catalyst has a concentration ranging from 0.02 to 0.15 molar equivalents relative to the amount of alcohol.

11. The process of claim 1, wherein the hypochlorite salt is added to the reaction mixture in an amount of between 0.9 and 2.5 molar equivalents relative to the amount of alcohol.

13. The process of claim 1, which is carried out at a temperature ranging between 0°C and 60°C

14. The process of claim 1, conducted in a solvent.

15. The process of claim 1, conducted in the absence of a solvent.